

forming a second layer of sacrificial material on said microstructure;
forming a metal cap on said second layer of sacrificial material, said cap forming a sealed cavity containing said microstructure and said first and said second sacrificial layers;
forming one or more holes in said metal cap, said holes being restricted to an area of said metal cap not directly above said microstructure;
introducing oxygen plasma into said sealed cavity through said one or more holes using a barrel etcher, said structural material and said sacrificial material having a high etch rate differential with respect to said oxygen plasma, such that said sacrificial material is removed; and
sealing said one or more holes in said metal cap.

REMARKS

The Examiner has rejected Claims 1, 2, 4, 21 and 22 under 35 U.S.C. § 102(b) as being anticipated by European Patent Application 0 624 900 A2 (Sparks). The Sparks reference was submitted by the Applicant in a Supplemental Information Disclosure Statement, paper number 14, filed September 16, 2002.

In a response to a prior Office Action the Applicant had modified Claim 1 to include the limitation that an oxygen plasma etch be used to etch the sacrificial material within the sealed cavity of the device. The Sparks reference discloses the use of oxygen plasma in a sealed cavity to etch sacrificial material.

In response to the Examiner's latest rejection the Applicant has modified Claim 1 to include the limitation that the cap which is formed over the second layer of sacrificial material prior to the removal of the sacrificial material by the oxygen plasma etch be metal. This is supported in the original specification on page 5, lines 21-30, which addresses the application of seal layer 18, which maybe a metal. In addition, the Applicant has revised Claim 1 to make it more clear that the holes etched to introduce the oxygen plasma are in the metal cap.

None of the art heretofore cited by the Examiner discloses the sealing of a microstructure in a cavity by a metal cap and, indeed, no art known to the Applicant discloses the use of the metal cap for that purpose.

The Examiner states that the Affidavit evidence under 37 C.F.R. § 1.132 filed with the response to the previous Office Action is insufficient to overcome the rejection of Claims 1-4, 21-22 because of the Sparks reference. However, the Applicant

respectfully submits that the addition of the limitation that the cap be metal renders the independent claim (and all dependant claims) s of the application patentable in light of the art already cited and the responses previously made.

CONCLUSION

The Applicant therefore respectfully submits that the Examiner's rejection under 37 C.F.R. § 102(b) has been traversed by the modification of Claim 1 to include the limitation of that the cap be metal. As a result the Applicant respectfully requests a Notice of Allowance for all currently pending claims at the earliest possible time.

Respectfully submitted,



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ADDENDUM
(Marked Up Claims)

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1. (Amended) A method of fabricating a microstructure in a sealed cavity comprising the steps of:

providing a substrate;

forming a microstructure composed of a structural material on said substrate, said microstructure being secured to said substrate by a first layer of sacrificial material;

forming a second layer of sacrificial material on said microstructure;

forming a metal cap on said second layer of sacrificial material, said cap forming a sealed cavity containing said microstructure and said first and said second sacrificial layers;

forming one or more holes in said [sealed cavity] metal cap, said holes being restricted to an area of said [sealed cavity] metal cap not directly above said microstructure;

introducing oxygen plasma into said sealed cavity through said one or more holes using a barrel etcher, said structural material and said sacrificial material having a high etch rate differential with respect to said oxygen plasma, such that said sacrificial material is removed; and

sealing said one or more holes in said [sealed cavity] metal cap.